

# THE CRATER CHRONICLE

## Know Where To Go When Snow Impacts Roads

The NWS office in Medford receives numerous calls in the winter and early spring seasons with requests for road conditions. While meteorologists can provide *weather conditions* and a *weather forecast* for a pass, they cannot provide road conditions, such as closures, chain requirements, or whether the roads are currently snow- or ice-covered. This falls under the realm of a state's Department of Transportation. In Oregon, ODOT, or the Oregon Department of Transportation, monitors road conditions, schedules plowing or sanding, and declares pass closures or chain requirements. In California, CalTrans, or the California Department of Transportation, oversees this information.

When in Oregon, there are several ways to check the road conditions for Oregon's roads. ODOT manages the phone number **511**. Simply dial this phone number if you are located in Oregon to access all of the current road conditions. You can also dial **1 (800) 977-ODOT (6368)**. If you are located out of state and are interested in road information for Oregon's roads, dial **1 (503) 588-2941**.

Second, ODOT maintains the



very popular and award-winning website <http://www.tripcheck.com>. A new feature this year is the ability to create a page of up to 10 road cameras customized by you. You can also save your camera preferences, which is especially helpful if you have a daily commute and want to easily view conditions at all cameras along your route. TripCheck can be accessed with a mobile phone at <http://m.tripcheck.com>.

ODOT uses **Twitter** feeds for its various highways, routes, cities, and mountain passes. You can "follow" the highways or mountain passes you are interested in, and road conditions, closures, and chain requirements related to that specific road will be noted on the feed. To access their Twitter feeds, go to <http://www.tripcheck.com>, and click on the "Twitter" tab in the top-right corner of the page.

For California, CalTrans operates the CalTrans Highway In-

formation Network (CHIN). Simply dial **511** or **1 (800) 427-ROAD (7623)** to access all information related to California's roads.

On the web, CalTrans offers web cameras of various highways and routes across California. You can also input the route or highway number you are interested in to receive current road conditions. All of this information can be accessed at <http://www.dot.ca.gov/>.

CalTrans has also taken to **Twitter** for broadcasting road conditions. CalTrans District 2 covers the counties of Siskiyou and Modoc and posts updates to their Twitter feed at <http://twitter.com/#!/CaltransD2>. This district covers all state and federal roads managed by CalTrans in those counties. This feed will not only update with winter conditions but also year-round closures or detours due to maintenance, accidents, etc.

Safe travels from NWS Medford!

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**Winter Begins  
December 21 at  
9:30 pm PST.**



## *From the Desk of the Meteorologist-In-Charge*

By John Lovegrove

Several years ago, NWS Western Region began emphasizing decision support services, with the goal being to provide the information our partners need to do their jobs. The entire NWS is moving toward decision support in the Weather-Ready Nation initiative. There is one long-standing program within the NWS that pioneered decision support services – the Incident Meteorologist program. Incident Meteorologists, or IMETs, were initially only associated with fire weather support but now do much more.

When a wildfire grows to sufficient size or complexity, the incident commander can request an IMET. Specially-trained forecasters stand by to be dispatched to the fire command center at a moment's notice. The IMET works shoulder-to-shoulder with fire personnel to plan how best to contain the fire and keep the firefighters safe. The IMETs bring with them all the equipment



IMET Chuck Redman of NWS Boise deploys weather sensors at a wildfire.

they will need including laptop computer, hand-held weather sensors and satellite communications.

The hours are long for an IMET. They rise in the wee hours of the morning to prepare a forecast for the morning briefing, then work on into the evening. The days are filled with deploying remote weather stations, providing briefings, and surveying the terrain to help them make the best forecasts possible. The IMET composes a forecast

geared specifically for the incident they are deployed to and is critical in determining how the fire will spread. A deployment can last as long as 14 days before a replacement arrives. Typically, there is an effort to deploy IMETs close to the home office but occasionally they may go several states away.

The IMET program has worked so well for fire incidents that it has expanded. IMETs are now deployed to hazardous material and oil spills. Following the devastating tornado outbreaks this year, IMETs were deployed to provide support to the clean-up efforts.

All IMETs volunteer for the duty. They must complete many training courses and three training deployments with an experienced IMET before being certified. The whole process can take two to three years. The training and working conditions are rigorous, but the rewards are great for an IMET, working right beside the people who are using their forecasts.

## *NWS Medford's Science Operations Officer Retires*

By John Lovegrove, Meteorologist-In-Charge

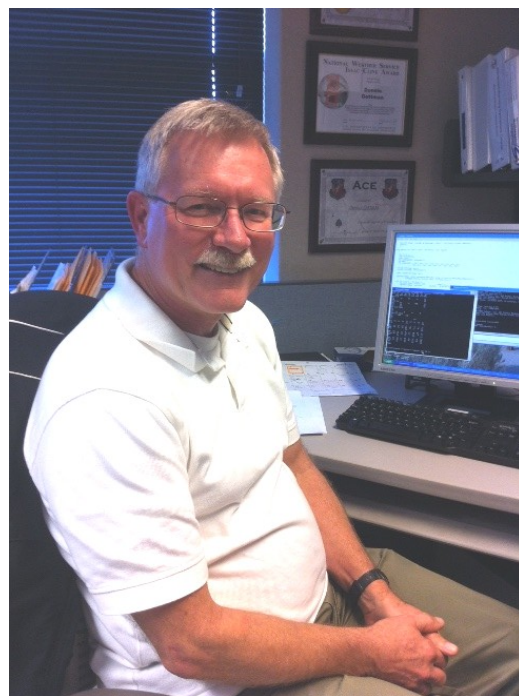
On December 31, 2011, an era will come to an end at the NWS Medford when long-time Science and Operations Officer Dennis Gettman retires from federal service. This caps a 39-year federal career that included 33 years in Medford. Dennis held several positions in Medford, starting as a meteorological technician taking observations in 1979.

Dennis earned his degree in atmospheric sciences from Oregon State Univ., while remaining employed full time. This enabled Dennis to follow his true passion and become a fire weather forecaster in 1986. While serving as a fire weather forecaster, Dennis became an Incident Meteorologist (IMET – see the MIC article above) and was dispatched to fires across the West. He quickly became known for being an attentive and accurate forecaster. Dennis

was deployed to over 30 fires in his career and also traveled to Australia to aid the Bureau of Meteorology's fire weather program in January 2011.

When the NWS was restructured in the mid-1990s, a new position was created – the Science and Operations Officer or the SOO. Dennis was awarded that position, and he held it for 17 years. As SOO, Dennis brought many innovations to Medford. He was instrumental in bringing grid-based forecasting to the office along with many tools to help forecasters with fire weather and forecasting in general.

Dennis' impact and influence on the NWS in Medford and across the West will be felt for many, many years. We all wish Dennis and his wife, Gail, many happy, healthy years of retirement.



## *NWS Medford Hosts 2nd Annual Aviation Open House*

On September 10, 2011, general aviation pilots from Southern Oregon and Northern California attended the second annual Medford Weather Forecast Office (WFO) Aviation Open House. The event began at the NWS Medford office before moving next door to the Rogue Valley International-Medford Airport terminal. By attending the Open House, some pilots were able to receive FAA WINGS pilot proficiency credits.

While at the WFO, pilots received a tour of the office, and forecasters on duty provided a demonstration of how Terminal Aviation Forecasts (TAFs) are composed and the data used in producing them. The Open House then continued at the



airport, where NWS Forecasters Shad Keene and Mike Petrucelli each gave a presentation focused on various aviation services offered by the National Weather Service.

Special guest speaker this year was John Werth, Meteorologist-In-Charge of the NWS Seattle Center Weather Service Unit in

Auburn, WA. The CWSU provides weather support and consultations to FAA air traffic managers and controllers for the air space and airport terminals in Washington, most of Oregon, far Northern California, and northern Idaho. These meteorologists often work alongside the Air Traffic Controllers to provide on-the-spot information,

especially in changeable weather conditions. The purpose of this talk was to highlight the services offered to pilots by the CWSU, as well as the information available on their website.

The day concluded with a roundtable discussion on the Aviation section of the NWS Medford web page and other services offered to pilots by the National Weather Service. This was an opportunity for local pilots to provide feedback on the NWS' aviation services at the local, regional, and national level. If you are a pilot in Southern Oregon or Northern California and would like more information on NWS Aviation, please email [Michael.Petrucelli@noaa.gov](mailto:Michael.Petrucelli@noaa.gov) or [Noel.Keene@noaa.gov](mailto:Noel.Keene@noaa.gov).

## *Should the Clouds Clear, the Winter Sky Comes Alive!*

Clouds prevail much of the time across Southwest Oregon and Northern California in the winter to limit nighttime sky-watching. If the clouds clear, however, there are several opportunities to bundle up, head outside, and train your eye on the sky, providing a brief break from the doldrums of winter.

December kicked off with a total lunar eclipse in the early morning hours of Dec. 10, as the moon began to set. The beginning of the event at 4:05 a.m. PST, along with the 51-minute period of totality, was visible in the Western U.S., but the moon dropped below the horizon in some loca-



© NASA/Jimmy Westlake 1985

tions before the entire event ended. This total lunar eclipse will be the last such event for viewers in the Western U.S. until April 15, 2014.

The peak of the Geminids meteor shower occurs Dec. 13-14, but meteors can be seen Dec. 6-

19. The Geminids rival the Perseids of August for one of the best meteor showers of the year. More than 60 meteors per hour will be seen during the height of the event and appear to radiate out of the constellation Gemini. Optimal viewing for the Geminids will be after midnight in a dark location, looking to the east. With a full moon on Dec. 10, moonshine will inhibit some viewing.

As 2012 gets underway, the Quadrantids (or Bootids) meteor shower begins to be visible with up to 40 meteors per hour at the peak. Active from January 1-5, 2012, the peak showing will oc-

cur on January 3-4, with optimal viewing after midnight in a dark location. The first-quarter moon will have set by this time, making for a good show. The meteors appear to radiate from the constellation Bootes. With only a few hours of active viewing time, this meteor shower is not as widely known as others but still lights up the night sky.

As we emerge from winter and begin to approach spring, Mars will make its closest approach to Earth on March 3. Its face will be fully illuminated by the Sun, making it the best time to view and photograph the Red Planet.



## 2011-2012 Wet Season's Climate Update

Brett Lutz, Meteorologist

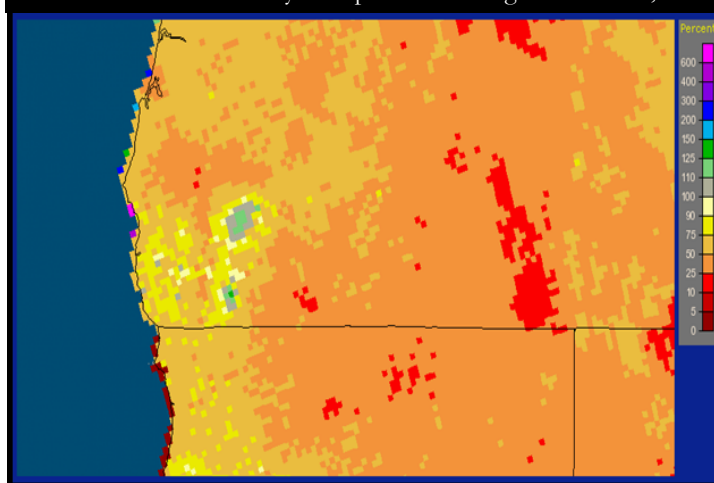
The 2011 Wet Season is off to a slow start for precipitation across most of the Medford forecast area. For the last 90 days, most locations are a mere 25% to 75% of normal. The exception is in much of Curry and Josephine counties, where precipitation has been closer to normal mostly due to a very significant storm system in the second half of November.

Mountain snowpack looked promising around Thanksgiving with locations generally believed to be 80-100% of normal.

Mount Ashland reported 24-33" of snow on the ground. However, blocking high pressure resulting in unusually dry December days with strong inversions has caused the snowpack to slip increasingly more behind with each passing day. As of December 5, Crater Lake National Park was only 70% of normal for snow depth, down nearly 30% from about a week prior.

What's the reason for this? La Niña has been lurking about the Equatorial Pacific. It has recently strengthened into the "moderate" range with a weekly temperature anomaly of -1.1C after being in the "weak" -0.5C to -1.0C range. Also, the Pacific Decadal Oscillation (PDO) has strongly been in the "Cool Phase" this autumn and has generally been in this phase since the 1998-99 Wet Season. Both of these climate predictors yield increased probabilities of colder and wetter than normal conditions for our winter wet seasons. However, this does not mean that we always get the colder and

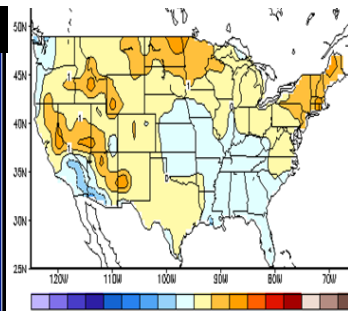
Percent of Normal 90-Day Precipitation Ending December 5, 2011



wetter conditions when these climate predictors are in place. Additionally, temperatures have been generally below normal on the West Side and above normal in the Southeast side.

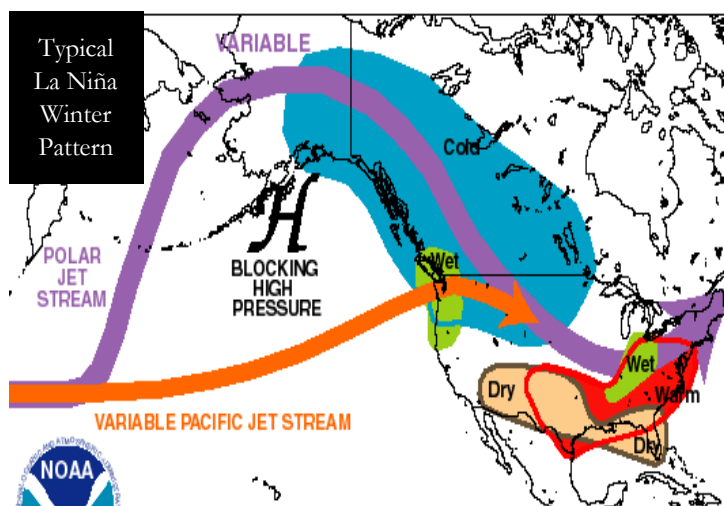
With La Niña and a cool PDO, we tend to be most confident in predicting the snowpack will be normal to above normal for the spring run-off. Most La Niña years actually tend to be wettest across our area in the autumn to early winter, primarily over southwestern sections, which includes Curry, Josephine, and western Siskiyou Counties. In the winter, the wetter-than-normal focus for La Niña tends to shift northward with time and is most likely to be prevalent from the Oregon Cascades westward. In a typical La Niña Wet Season, temperatures are most likely to be below normal from November into the summer.

For this wet season, the first question to answer must be, "When will the current blocking high pressure ridge break down?" The Madden-Julian



Above - 90-day temperature departures (degree C), ending December 3, 2011.

season for some time, especially southeast of the Oregon Cascades. Temperatures are very likely to remain below normal for this winter into the spring with the snowpack average to above-average, as colder temperatures help the snow that does fall to stick around more and at lower elevations than normal. This is certainly good news for winter recreationalists and water sources dependent on snowmelt, but probably not as good for drivers. Many La Niña and Cool Phase PDO years have seen significant snowfall on the usually snow-free valley floors.



## *New Satellites & Coastal Radar Aim to Aid Forecasting*

Several new tools were recently deployed to improve weather predictions, research, and monitoring. The first tool is the newest addition to the NWS Doppler Radar network: a coastal radar located in Washington State. Officially named Langley Hill (Radar ID LGX), the radar is located about 3 miles east of Copalis Beach in Grays Harbor County and is shown in the far right photo.



It has been operational since September and will provide a wider view of the Pacific Ocean, improving precipitation forecasting as storms approach the coastline.

The second tool is the NPP Satellite, a joint venture between NASA and NOAA to improve global environmental monitoring, research, and weather prediction. The satellite was launched from California's Vandenberg Air Force Base Oct. 28, which is shown in the photo to the left. Data and images from the new satellite began flowing into NOAA's Satellite Operations Facility in Maryland on Nov. 8, as the first of five instruments were commissioned, powered on, and tested. The first image was a measurement of water vapor in the lower atmosphere. A subsequent image followed on Nov. 21, and displayed clouds in vivid detail over eastern North America, from Canada's Hudson Bay to Venezuela's northern coast. The satellite is orbiting Earth at an altitude of 512 miles, speeding along at 16,640 mph.



Lastly, new satellite GOES-15 became operational on December 6 and replaces GOES-11 as NOAA's designated GOES-West satellite. This satellite is responsible for the Pacific and Western U.S. and will provide higher-resolution images for monitoring weather patterns and gathering atmospheric data. GOES-15 was originally launched by NASA in early 2010.

## *NOAA Dedicates New Pacific Marine Operations Center*

In the late summer, NOAA and the Port of Newport, OR, dedicated a new NOAA ship operations facility. The NOAA Marine Operations Center - Pacific serves as the home port for four NOAA research and survey ships, one of which is shown in the picture to the right. The facility will also provide administrative, engineering, maintenance, and logistical support for NOAA's entire Pacific fleet of nine ships, which are based in either Hawaii or Alaska. The ships and center are part of NOAA's Office of Marine and Aviation Operations and were previously based in Seattle. This agency is staffed by both civilians and NOAA Corps officers, one of seven uniformed services in the United States.

According to NOAA, the ships will collect data in the protection of marine mammals, coral reefs and historic shipwrecks; manage commercial marine fish stocks; understand climate processes; and produce nautical charts to keep mariners safe. NOAA ships also deploy and help maintain buoys that gather oceanographic and weather information and warn of tsunamis. Locations of NOAA ships can be followed at <http://shiptracker.noaa.gov>.



Photo taken by NWS Portland.



# Avalanche Dangers in the Backcountry of the West

By Michael Ottenweller, Meteorologist

As we move back into our winter season here in Southern Oregon and Northern California, we shift our focus to winter weather and especially snow. While the Rogue Valley generally does not see significant accumulations, plenty of locations throughout the area can see several feet during the season. Crater Lake, Mt. Shasta, and the Kalmiopsis Wilderness are a few spots that see abundant snowfall from now until the late spring. Many people enjoy venturing out to explore the snow on skis, sled, snowmobiles, or snowshoes; however, one often forgotten hazard of the back country this time of year is avalanches. On average, 25 people die each year in the United States from avalanches. A little education can go a long way in keeping you safe as you enjoy the wilderness this winter.

There are many components that lead to an avalanche. Terrain and slope angle are two critical factors that remain constant. The most dangerous slopes for producing avalanches are between 35 and 50 degrees. Anything steeper than 50 degrees and the snow cannot hold to the face. Another important factor that does change is the type of snow. Unstable layers located deep beneath the surface are often the cause of larger avalanches. This can mean that even though snow has been on a mountain all winter long, it could still be unstable and dangerous. The last component to set the stage for an avalanche is the weather. Has the wind been

North American Public Avalanche Danger Scale				
Avalanche danger is determined by the likelihood, size and distribution of avalanches.				
Danger Level		Travel Advice	Likelihood of Avalanches	Avalanche Size and Distribution
5 Extreme		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.
4 High		Very dangerous avalanche conditions. Travel in avalanche terrain <u>not</u> recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
3 Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
2 Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
1 Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or extreme terrain.
Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.				

blowing? Has it been snowing heavily or raining? Has the temperature changed drastically in a short period? All of these can be clues to increased potential for avalanches. Wind can move massive amounts of snow from one slope to another. Heavy snow or even rain on top of one of those weak layers can produce a prime avalanche environment, while rapid temperature changes can also make the snowpack more unstable.

Even though winter has not brought much snow to the area so far this year, that could all change very quickly. Crater Lake National Park had 25 inches on the ground in early December, which is 71% of normal. Mt. Shasta Ski Park has 10 inches, and Mt Ashland Ski Area has a base between 24 and 33 inches. With a moderate La Niña present, the forecast remains for a colder-than-normal and slightly wetter-than-normal winter,

meaning even though not much snow has fallen yet, any snow that does fall is more likely to stick around for the winter months. If last season’s La Niña is any indicator, where Crater Lake received a whopping 672.5” of snow, we should still expect some wet weather. This early December cold and dry pattern can make ideal conditions for hoar frost. Hoar frost can produce a perfectly unstable layer that will be ripe for release when loaded with heavy snow.

90% of avalanches with loss of life are caused by humans. What can you do to stay safe when traveling in the back country this winter? Stay alert to changing snow stability and recent weather conditions. Travel in a group, but only approach potential avalanche slopes one at a time. Look for the tell-tale signs such as recent avalanches, cracks in the snowpack, and wind-blown snow cornices. Always carry the

proper equipment, including an avalanche beacon, shovel, and probe. Know how to use each tool and practice before you go. If you are caught in an avalanche, perform a swimming motion and try to reach a portion of your body sky-ward just as the snow is settling.

Education is your best defense against avalanche danger. There are several websites with current conditions and more information: <http://www.avalanche.org/>, <http://www.shastaavalanche.org/advisories/advisories/avalanche-advisory>, and <http://avalanche.state.co.us/index.php> are just a few. These websites also have information on when classes will be held near Mt Shasta. These classes are the best way to further your knowledge and practice your rescue skills. Enjoy the back country and stay safe this winter.

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### Visit Our Website!

<http://www.weather.gov/medford>

### Our Vision

*Professionals focusing on science, teamwork, and customer service to design and deliver the best decision-support information to our community.*

### Our Mission

*Our team at the National Weather Service Office in Medford strives to deliver the best observational, forecast, and warning information through exceptional customer service, extensive training and education, maintaining quality electronic systems, and relying upon an outstanding team of weather spotters and cooperative observers. We do this within the overall mission of the NWS:*

*To provide weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.*

### Our Values

*Trust, Integrity, Professionalism, Service, Teamwork, Ingenuity, Expertise, and Enthusiasm.*

### About Us

The Weather Forecast Office in Medford, Oregon, is one of more than 120 field offices of the National Weather Service, an agency under the National Oceanic and Atmospheric Administration and the United States Department of Commerce. The Weather Forecast Office in Medford serves 7 counties in southwestern Oregon and 2 counties in northern California, providing weather and water information to more than a half-million citizens. We are also responsible for the coastal waters of the Pacific Ocean from Florence, Oregon, to Point St. George, California, extending 60 miles offshore. The office is staffed 24 hours a day, 7 days a week, and 365 days a year by a team of 26 meteorologists, hydrologists, electronic technicians, hydro-meteorological technicians, and administrative assistants, under the direction of Meteorologist-In-Charge John Lovegrove.

